

**FACT SHEET AND STATEMENT OF BASIS  
LOGAN CITY LAGOONS  
RENEWAL PERMIT: DISCHARGE  
UPDES PERMIT NUMBER: UT0021920  
MAJOR MUNICIPAL**

**FACILITY CONTACTS**

Person Name:	Issa Hamud
Position:	Environmental Director
Phone Number:	(435) 716-9752
Person Name:	Jim Harps
Position:	Wastewater Treatment Manager
Phone Number:	(435) 716-9797
Person Name:	Tim Lindsay
Position:	Wastewater Operator
Phone Number:	(435) 716-9764
Facility Name:	Logan City Environmental
Organization Mailing Address:	153 N 1400 W Logan, UT 84321
Telephone:	(435) 716-9755
Actual Address:	2300 West 200 North Logan, UT 84321

**DESCRIPTION OF FACILITY**

The sewage treatment lagoons are located west-northwest of Logan City. The discharge point is outfall 002, located on the easterly right-of-way of Benson Road and Swift Slough. The facility consists of a seven cell facultative lagoon system: primary cells A1 and B1 run in parallel. A1 flows to A2, B1 flows to B2. A2 and B2 flow to cell C, then D, then E. From cell E (outfall 001), water is used for either irrigation (Mid April - October) or it flows to the 5-cell wetland polishing system. Total treatment area 460 Acres of Lagoons, 240 acres of treatment wetlands. The design capacity is 30 MGD. The discharge from 002 is limited to 22 MGD in the summer, 21 MGD in the spring and fall and 16 MGD during winter, non-irrigation season.

**SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

Based on the results of reasonable potential analysis (RP), limits for cyanide and mercury have been added to the permit. Also based upon RP, limits for copper and lead have been removed from the permit. Please see the Reasonable Potential section of this Fact Sheet for more information.

Industrial Storm water provisions have been removed from the permit. The facility will be required to obtain coverage or an appropriate exclusion under the Storm Water Multi-Sector General Permit for industrial activities. Please see the Storm Water section of this Fact Sheet for more information.

The compliance schedule of the permit has been updated to include only remaining milestones that have yet to be completed.

Logan City provided comment to the draft permit on July 20, 2020. Those comments were responded to on July 20, 2020. As a result of those comments, the public notice period was reopened on August 21, 2020 because of the establishment of interim limits for Dissolved Oxygen, monthly minimum and a change made to the compliance schedule in the draft permit. All other comments resulted in changes that were deemed minor and did not require additional action.

## **DISCHARGE**

### **DESCRIPTION OF DISCHARGE**

**Location:** The sewage treatment lagoons are located west-northwest of Logan City. The main discharge point is outfall 002, located on the easterly right-of-way off Benson Road and Swift Slough.

Logan City has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. The results of that monitoring can be found in Attachment 2 at the end of this report.

Coordinates: 41° 44' 37.20" latitude, -111° 52' 42.45" longitude.

The Facility has 3 outfalls:

<u>Outfall Number</u>	<u>Location of Discharge Point</u>
001A	Discharge from the lagoon system, located approximately 100 yards downstream of the chlorination basin. The discharge is initially conveyed by means of an open ditch to Benson Road. During the irrigation season it is used as irrigation water on fields to the west of the facility. If not used as irrigation water, it is piped north along the east side of the road until it reaches the wetland polishing system. Latitude: 41°44'23 Longitude: -111°53'59
001B	Discharge from the lagoon system, located approximately 20 yards downstream of the chlorination basin. The discharge is initially conveyed by means of an open ditch to a ditch that runs to the west, parallel to 200 N. From there it is used as irrigation water on fields to the west of the facility. Latitude: 41°44'20 Longitude: -111°53'53"
002	Discharge from wetlands polishing treatment system to Swift Slough, which flows approximately 2.5 miles to wetlands associated with the Cutler Reservoir. The discharge is piped through a 36" HDPE pipe into Swift Slough. Latitude: 41°46'15.3" Longitude: -111°54'41.80"

**RECEIVING WATERS:** Outfall 001A and Outfall 001B discharge to irrigation ditches that are classified as 2B, 3E, 4 according to *Utah Administrative Code (UAC) R317-2-13.9*.

2B - Protected for secondary contact recreation such as boating, wading or similar uses.

- 3E - Severely habitat-limited waters. Narrative Standards will be applied to protect these waters for aquatic wildlife.
- 4 - Protected for agricultural uses including irrigation of crops and stock watering.

Outfall 002 discharges to Swift Slough, which discharges to the Cutler Reservoir. Swift Slough is classified as 2B, 3C, 4 according to *Utah Administrative Code (UAC) R317-2-13*.

- 2B - Protected for secondary contact recreation such as boating, wading or similar uses.
- 3C - Protected for non-game fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- 4 - Protected for agricultural uses including irrigation of crops and stock watering.

#### **BASIS FOR EFFLUENT LIMITATIONS**

In accordance with regulations promulgated in 40 Code of Federal Regulations (CFR) Part 122.44 and in UAC R317-8-4.2, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no water quality standards for a particular parameter have been developed, Best Professional Judgment (BPJ) may be used where applicable.

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD5), *E. coli*, pH and percent removal for BOD5 and TSS are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. The oil and grease is based on best professional judgment (BPJ). Attached is a Wasteload Analysis for this discharge into the unnamed irrigation ditch. It has been determined that this discharge will not cause a violation of water quality standards. An Antidegradation Level II review is not required since the Level I review shows that water quality impacts are minimal. The permittee is expected to be able to comply with these limitations. The permit limitations are:

1. Since outfalls 001A and 001B discharge to waters of the State as defined in *UAC R317-1-1.30* and are protected for beneficial use classes 2B, 3E and 4, no waste-loads were developed for these outfalls. Effluent limitations for these outfalls are based on current Utah Secondary Treatment Standards, *UAC R317-1-3.2*. These effluent limitations will be enforced only during the irrigation season since during the remaining months the effluent will be conveyed to the treatment wetlands for further treatment and access to the ditch will be controlled and limited to authorized personnel only.
2. Flow from Outfall 002 is limited based on facility operational requirements and was used to develop the WLA.
3. Limitations on metals, total ammonia, and WET testing are derived in the WLA and based upon reasonable potential analysis.
4. Since percent removal requirement will have already been met for outfall 001A, percent removal requirements are not being required for outfall 002.
5. Since Total Residual Chlorine (TRC) is not required to be tested at outfalls 001A and 001B, and should be dissipated long before the effluent reaches outfall 002, TRC testing is not being required.

Waste water discharged from Outfall 001a and Outfall 00b shall be used for irrigation or transported to the constructed wetlands. If waste water from these two outfalls is diverted into the Logan River it should meet 3A designated use standards.

### **REASONABLE POTENTIAL ANALYSIS:**

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required

A quantitative RP analysis was performed on aluminum, arsenic , cadmium, chromium, copper, cyanide, lead, mercury, selenium, silver, and zinc to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: cyanide (Outcome A).

An initial review of the data indicated that both cyanide and mercury both had reasonable potential to exceed the most stringent chronic water quality standard. Further analysis was done on the two parameters and the data were analyzed for any outliers. Both data sets were revealed to contain an outlier. Those outliers were removed and the reasonable potential analysis was rerun. Based on this, cyanide was shown to have reasonable potential and mercury did not. However, monthly monitoring for mercury will be included in the permit (Outcome B).

A copy of the RP analysis is included at the end of this Fact Sheet.

### **TMDL REQUIREMENTS:**

This facility ultimately discharges to Cutler Reservoir which is listed on Utah's 2006 303(d) list of impaired water-bodies as defined in the Clean Water Act. As required under federal regulations, a total maximum daily load (TMDL) will be developed for all 303(d) listed waters. Specifically, Cutler Reservoir has been identified as impaired for total phosphorous (TP) and dissolved oxygen. The Bear River Middle and Cutler Reservoir TMDL was approved by the U.S. EPA February 23, 2010. The final phosphorus limits from outfall 002 shall be 4,405 kg/ total phosphorus from May through October and 11,831 kg total phosphorus from November through April. If Logan city decides to move its discharge point to Outfall 001A and/or Outfall 001B, then the final phosphorus limits from those outfalls shall be a combined total of 11,487 kg from May through October and 12,901 kg from November through April. These limits will become effective April 1, 2022 after the new mechanical plant is operational.

### **TBPEL RULE:**

Water Quality adopted *UAC R317-1-3.3*, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. No TBPEL will be instituted for discharging treatment lagoons. Instead, each discharging lagoon will be evaluated to determine the current annual average total phosphorus load measured in pounds per year based on monthly average flow rates and concentrations. A cap of 125% of the current annual total phosphorus load will be established and referred to as phosphorus loading cap. Once the lagoon's phosphorus loading cap has been reached, the owner of the facility will have five years to construct treatment processes or implement treatment alternatives to prevent the total phosphorus loading cap from being exceeded. However, this facility is subject to the Bear River Middle and Cutler Reservoir TMDL which supersedes the TBPEL rule. Since the lagoons cannot meet the phosphorus limits set forth in the TMDL, the facility is currently subject to a compliance schedule and is in the process of construction a new mechanical treatment plant to replace the lagoon treatment system.

The TBPEL rule mandates the following sampling regime.

*R317-1-3.3, E, 1, a.* Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;

R317-1-3.3, E, 1, b.

Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N);

In R317-1-3.3, E, 3 the rule states that all monitoring shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

<b>Table 1. Effluent Limitations <sup>a</sup></b>						
	Maximum Monthly Avg	Minimum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
<b>Outfall 001A and Outfall 001B <sup>a</sup> <sup>b</sup></b>						
BOD <sub>5</sub> , mg/L	25	--	35		--	--
BOD <sub>5</sub> Min. % Removal	85	--	--		--	--
TSS, mg/L	25	--	35		--	--
TSS Min. % Removal	85	--	--		--	--
E. coli, no./100mL	126	--	157		--	--
pH, Standard Units	--	--	--	--	6.5	9.0
<b>Outfall 002 <sup>a</sup> <sup>b</sup></b>						
Total Flow, MGD <sup>b</sup> <sup>c</sup>						
Summer (Jul-Sep)	--	--	--	--	--	22
Fall (Oct-Dec)	--	--	--	--	--	21
Winter (Jan-Mar)	--	--	--	--	--	16
Spring (Apr-Jun)	--	--	--	--	--	21
BOD <sub>5</sub> , mg/L <sup>d</sup>	25	--	35	--	--	--
TSS, mg/L <sup>d</sup>	25	--	35	--	--	--
Total Ammonia (as N), mg/L <sup>e</sup>						
Summer (Jul-Sep)	--	--	--	--	--	9.1
Fall (Oct-Dec)	--	--	--	--	--	11.2
Winter (Jan-Mar)	--	--	--	--	--	14.4
Spring (Apr-Jun)	--	--	--	--	--	11.9
Dissolved Oxygen, mg/L						
Summer (Jul-Sep)	--	-- <sup>e</sup>	--	--	4.0	--
Fall (Oct-Dec)	--	-- <sup>e</sup>	--	--	4.0	--
Winter (Jan-Mar)	--	-- <sup>e</sup>	--	--	4.0	--
Spring (Apr-Jun)	--	-- <sup>e</sup>	--	--	4.0	--
Oil & Grease, mg/L	--	--	--	--	--	10.0
pH, Standard Units	--	--	--	--	6.5	9
Total Cyanide, µg/L	5.4	--	--	--	--	23.6
Mercury, µg/L	0.012	--	--	--	--	2.6
WET, Chronic Biomonitoring						
Summer (Jul-Sep)	--	--	--	--	--	IC25> 90% effluent
Fall (Oct-Dec)	--	--	--	--	--	IC25> 79% effluent
Winter (Jan-Mar)	--	--	--	--	--	IC25> 74% effluent
Spring (Apr-Jun)	--	--	--	--	--	IC25> 92% effluent

**SELF-MONITORING AND REPORTING REQUIREMENTS**

The following self-monitoring requirements. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

<b>Table 2: Self-Monitoring and Reporting Requirements *a</b>			
Parameter	Frequency	Sample Type	Units
<b>Outfall 001A and 001B</b> (When being used as irrigation water during the irrigation season, April 15-October 1)			
Total Flow *b, *c	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent *f	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
TSS, Influent *f	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
<i>E. coli</i>	Weekly	Grab	No./100mL
pH	Daily	Grab	SU
<b>Outfall 002</b>			
BOD <sub>5</sub>	Weekly	Composite	mg/L
TSS	Weekly	Composite	mg/L
Total Ammonia (as N)	Weekly	Composite	mg/L
pH	Daily	Grab	SU
DO *g	Daily	Grab	mg/L
Total Cyanide, µg/L	Monthly	Composite	µg/L
Mercury, µg/L	Monthly	Composite	µg/L
Oil & Grease *h	When Sheen Observed	Grab	mg/L
WET – Biomonitoring *i			
Ceriodaphnia - Chronic	Quarterly	Composite	Pass/Fail
Fathead Minnows - Chronic	Quarterly	Composite	Pass/Fail
Orthophosphate (as P), Effluent	Weekly	Composite	mg/L
Total Phosphorus (as P), Influent	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N)			
Influent	Weekly	Composite	mg/L
Effluent	Weekly	Composite	mg/L
Nitrate, NO <sub>3</sub>	Weekly	Composite	mg/L

Nitrite, NO <sub>2</sub>	Weekly	Composite	mg/L
Metals, Influent	Quarterly	Grab/Composite	mg/L
Effluent	Quarterly	Grab/Composite	mg/L
Organic Toxics, Influent	Yearly	Grab/Composite	mg/L
Effluent	Yearly	Grab/Composite	mg/L

- \*a See Definitions, *Part VIII*, for definition of terms.
- \*b Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- \*c If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- \*d Since percent removal requirement shall already be met at Outfall 001a and Outfall 001b, no percent removal requirement will be required at outfall 002
- \*e Interim limits for the Logan City Lagoons. Final Limits for the new mechanical treatment plants are found in the compliance schedule found in *Part 1.C.3.a* of the permit and will become effective April 1, 2022 after the new mechanical plant is operational.
- \*f In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.
- \*g Dissolved Oxygen: In addition to the effluent limit for daily minimum, the facility will also be required to report the monthly minimum average.
- \*h Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- \*i Both the chronic *Ceriodaphnia* and chronic fathead minnows will be tested quarterly.

**BIOMONITORING REQUIREMENTS**

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring) dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, *UAC R317-8-4.2*, Permit Provisions, *UAC R317-8-5.3* and Water Quality Standards, *UAC R317-2-5 and R317 -2-7.2*.

Since the permittee is a major municipal discharger, the renewal permit will again require whole effluent toxicity (WET) testing. For facilities over 20 MGD, the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control recommends monthly WET testing. While this facility has a design flow of 30 MGD, flows are limited by season to flow rates between 16 and 22 MGD. The months where flow limits are above 20 MGD are during the irrigation season when most of the facility’s discharge is being land applied and not being discharged from Outfall 002. As a result the facility Chronic quarterly biomonitoring will be required as described in the permit. This frequency is based upon Best Professional Judgment. New concentrations are listed in the table below and were discussed in the changes section above. The IC<sub>25</sub> is the inhibition concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

The permit contains the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary. The permit also contains a toxicity limitation re-opener provision. This provision allows for modification of the permit at any time to include WET limitations and/or increased WET monitoring, should additional information indicate the presence of toxicity in the discharge.

Seasonal Chronic WET Limits as Taken From Table 2 in The WLA

Seasonal Chronic WET Limits as Taken From Table 2 in The WLA	
Season	Chronic WET IC <sub>25</sub> % Eff.
Summer	>90
Fall	>79
Winter	>74
Spring	>92

**PRETREATMENT REQUIREMENTS**

The pretreatment requirements, regarding administering an approved pretreatment program, remain the same as in the current permit. Any substantial and/or non-substantial changes to the program as defined in *40 CFR 403.18* must be submitted for approval to the Division of Water Quality. Authority to require a pretreatment program is provided for in *19-5-108 UCA, 1953 ann.* and *UAC R317-8-8*.

The sampling of metals will be conducted quarterly and the sampling of organic toxics yearly, see Part II of the UPDES Permit. This is consistent with the guidance developed by the Division of Water Quality. Additional requirements have been added to the permit to ensure that if the allowable headworks loading is above the value calculated for the local limit development that additional monitoring and notification must occur.

The permittee will be required to perform an annual evaluation of the need to revise or develop technically based local limits to implement the general and specific prohibitions of *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, or that they must be revised. The initial evaluation is due twelve months after the effective date of the permit. As part of this evaluation, the permit requires influent and effluent monitoring for metals and organic toxics. The permittee should utilize EPA's Local Limits Development Guidance to justify the re-evaluation of the local limits.

**BIOSOLIDS**

The State of Utah has become the sludge permitting authority under 40 CFR Part 503. However, since the City of Logan presently has a lagoon system, there is no sludge production as there would be at a mechanical plant. Therefore the requirements of 503 do not apply unless sludge is removed from the lagoons or the vegetative wetlands.

**STORM WATER**

Coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000) is required for all treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of a facility with a design flow of 1.0 mgd or more, or are required to have an approved pretreatment program under 40 CFR Part 403. Since the facility is classified as a Major and discharges over 1.0 mgd, storm water coverage is required. If the facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for coverage under the MSGP or exclusion documentation.



### **PERMIT DURATION**

It is recommended that this permit be effective for duration of five (5) years.

Drafted by  
Lonnie Shull, Discharge, Biomonitoring  
Daniel Griffin, Biosolids  
Jennifer Robinson, Pretreatment  
Lisa Stevens, Storm Water  
Mike Allred, TMDL  
Nick von Stackelberg, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

### **PUBLIC NOTICE**

Original Began: June 19, 2020  
    Ended: July 20, 2020  
Second Began: August 20, 2020  
    Ended: September 21, 2020

Comments will be received at:      195 North 1950 West  
  PO Box 144870  
  Salt Lake City, UT 84114-4870

The Public Noticed of the draft permit was published on the Division of Water Quality's website.

During the public comment period provided under *R317-8-6.5*, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in *R317-8-6.12*.

Logan City provided comment to the draft permit on July 20, 2020. Those comments were responded to on July 20, 2020. As a result of those comments, the public notice period was reopened on August 21, 2020 because of the establishment of interim limits for Dissolved Oxygen, monthly minimum and a change made to the compliance schedule in the draft permit. All other comments resulted in changes that were deemed minor and did not require additional action.

### **ADDENDUM TO FSSOB**

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

**Responsiveness Summary**

Logan City provided comment to the draft permit on July 20, 2020. Those comments were responded to on July 20, 2020. As a result of those comments, the public notice period was reopened on August 21, 2020 because of the establishment of interim limits for Dissolved Oxygen, monthly minimum and a change made to the compliance schedule in the draft permit. All other comments resulted in changes that were deemed minor and did not require additional action.

There were no comments during the second public comment period.

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# **ATTACHMENT 1**

## *Industrial Waste Survey*

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# Industrial Pretreatment Wastewater Survey



Do you periodically experience any of the following treatment works problems:

- foam, floaties or unusual colors
- plugged collection lines caused by grease, sand, flour, etc.
- discharging excessive suspended solids, even in the winter
- smells unusually bad
- waste treatment facility doesn't seem to be treating the waste right

Perhaps the solution to a problem like one of these may lie in investigating the types and amounts of wastewater entering the sewer system from industrial users.

An industrial user (IU) is defined as a non-domestic user discharging to the waste treatment facility which meets any of the following criteria:

1. **has a lot of process wastewater (5% of the flow at the waste treatment facility or more than 25,000 gallons per work day.)**

Examples: Food processor, dairy, slaughterhouse, industrial laundry.

2. **is subject to Federal Categorical Pretreatment Standards;**

Examples: metal plating, cleaning or coating of metals, blueing of metals, aluminum extruding, circuit board manufacturing, tanning animal skins, pesticide formulating or packaging, and pharmaceutical manufacturing or packaging,

3. **is a concern to the POTW.**

Examples: septage hauler, restaurant and food service, car wash, hospital, photo lab, carpet cleaner, commercial laundry.

All users of the water treatment facility are **prohibited** from making the following types of discharges:

1. A discharge which creates a fire or explosion hazard in the collection system.
2. A discharge which creates toxic gases, vapor or fumes in the collection system.
3. A discharge of solids or thick liquids which creates flow obstructions in the collection system.
4. An acidic discharge (low pH) which causes corrosive damage to the collection system.
5. Petroleum oil, non-biodegradable cutting oil, or products of mineral oil origin in amounts that will cause problems in the collection system or at the waste treatment facility.
6. Waste haulers are prohibited from discharging without permission. (No midnight dumping!)

When the solution to a sewer system problem may be found by investigating the types and amounts of wastewater entering the sewer system discharged from IUs, it's appropriate to conduct an Industrial Waste Survey.

## An Industrial Waste Survey consists of:

### Step 1: Identify Industrial Users

Make a list of all the commercial and industrial sewer connections.

Sources for the list:

business license, building permits, water and wastewater billing, Chamber of Commerce, newspaper, telephone book, yellow pages.

Split the list into two groups:

domestic wastewater only--no further information needed  
everyone else (IUs)

### Step 2: Preliminary Inspection

Go visit each IU identified on the "everybody else" list.

Fill out the **Preliminary Inspection Form** during the site visit.

### Step 3: Informing the State

Please fax or send a copy of the Preliminary inspection form (both sides) to:

Jennifer Robinson

Division of Water Quality  
195 North 1950 West  
PO Box 144870  
Salt Lake City, UT 84114-4870

Phone: (801) 536-4383  
Fax: (801) 536-4301  
E-mail: [jenrobinson@utah.gov](mailto:jenrobinson@utah.gov)

**PRELIMINARY INSPECTION FORM**

**INSPECTION DATE** \_\_\_ / \_\_\_ /

**Name of Business** \_\_\_\_\_ **Person Contacted** \_\_\_\_\_  
**Address** \_\_\_\_\_ **Phone Number** \_\_\_\_\_

**Description of Business** \_\_\_\_\_

**Principal product or service:** \_\_\_\_\_

**Raw Materials used:** \_\_\_\_\_

**Production process is:**  Batch  Continuous  Both

**Is production subject to seasonal variation?**  yes  no

**If yes, briefly describe seasonal production cycle.**

**This facility generates the following types of wastes (check all that apply):**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Domestic wastes              | (Restrooms, employee showers, etc.)                    |
| 2. <input type="checkbox"/> Cooling water, non-contact   | 3. <input type="checkbox"/> Boiler/Tower blowdown      |
| 4. <input type="checkbox"/> Cooling water, contact       | 5. <input type="checkbox"/> Process                    |
| 6. <input type="checkbox"/> Equipment/Facility wash-down | 7. <input type="checkbox"/> Air Pollution Control Unit |
| 8. <input type="checkbox"/> Storm water runoff to sewer  | 9. <input type="checkbox"/> Other describe             |

**Wastes are discharged to (check all that apply):**

- |   |                                       |
|---|---------------------------------------|
| <input type="checkbox"/> Sanitary sewer   | <input type="checkbox"/> Storm sewer  |
| <input type="checkbox"/> Surface water    | <input type="checkbox"/> Ground water |
| <input type="checkbox"/> Waste haulers    | <input type="checkbox"/> Evaporation  |
| <input type="checkbox"/> Other (describe) |                                       |

**Name of waste hauler(s), if used**

**Is a grease trap installed?** Yes No

**Is it operational?** Yes No

**Does the business discharge a lot of process wastewater?**

- |   |     |    |
|---|-----|----|
| • More than 5% of the flow to the waste treatment facility? | Yes | No |
| • More than 25,000 gallons per work day?                    | Yes | No |



**Does the business do any of the following:**

- |   |  |
|---|--|
| <input type="checkbox"/> Adhesives                                    | <input type="checkbox"/> Car Wash                  |
| <input type="checkbox"/> Aluminum Forming                             | <input type="checkbox"/> Carpet Cleaner            |
| <input type="checkbox"/> Battery Manufacturing                        | <input type="checkbox"/> Dairy                     |
| <input type="checkbox"/> Copper Forming                               | <input type="checkbox"/> Food Processor            |
| <input type="checkbox"/> Electric & Electronic Components             | <input type="checkbox"/> Hospital                  |
| <input type="checkbox"/> Explosives Manufacturing                     | <input type="checkbox"/> Laundries                 |
| <input type="checkbox"/> Foundries                                    | <input type="checkbox"/> Photo Lab                 |
| <input type="checkbox"/> Inorganic Chemicals Mfg. or Packaging        | <input type="checkbox"/> Restaurant & Food Service |
| <input type="checkbox"/> Industrial Porcelain Ceramic Manufacturing   | <input type="checkbox"/> Septage Hauler            |
| <input type="checkbox"/> Iron & Steel                                 | <input type="checkbox"/> Slaughter House           |
| <input type="checkbox"/> Metal Finishing, Coating or Cleaning         |  |
| <input type="checkbox"/> Mining                                       |  |
| <input type="checkbox"/> Nonferrous Metals Manufacturing              |  |
| <input type="checkbox"/> Organic Chemicals Manufacturing or Packaging |  |
| <input type="checkbox"/> Paint & Ink Manufacturing                    |  |
| <input type="checkbox"/> Pesticides Formulating or Packaging          |  |
| <input type="checkbox"/> Petroleum Refining                           |  |
| <input type="checkbox"/> Pharmaceuticals Manufacturing or Packaging   |  |
| <input type="checkbox"/> Plastics Manufacturing                       |  |
| <input type="checkbox"/> Rubber Manufacturing                         |  |
| <input type="checkbox"/> Soaps & Detergents Manufacturing             |  |
| <input type="checkbox"/> Steam Electric Generation                    |  |
| <input type="checkbox"/> Tanning Animal Skins                         |  |
| <input type="checkbox"/> Textile Mills                                |  |

**Are any process changes or expansions planned during the next three years? Yes No**  
If yes, attach a separate sheet to this form describing the nature of planned changes or expansions.

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Inspector

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Waste Treatment Facility

**Please send a copy of the preliminary inspection form (both sides) to:**

**Jennifer Robinson  
Division of Water Quality  
PO Box 144870  
Salt Lake City, Utah 84114-4870**

**Phone: (801) 536-4383  
Fax: (801) 536-4301  
E-Mail: [jenrobinson@utah.gov](mailto:jenrobinson@utah.gov)**

	<b>Industrial User</b>	<b>Jurisdiction</b>	<b>SIC Codes</b>	<b>Categorical Standard Number</b>	<b>Total Average Process Flow (gpd)</b>	<b>Total Average Facility Flow (gpd)</b>	<b>Facility Description</b>
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

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# ATTACHMENT 2

## *Effluent Monitoring Data*

(See attached Sheets)

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# **ATTACHMENT 3**

## *Wasteload Analysis*

(See attached Sheets)

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## **ATTACHMENT 4**

*Reasonable Potential Analysis*



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## REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis<sup>1</sup>. They are;

- Outcome A: A new effluent limitation will be placed in the permit.
- Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
- Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
- Outcome D: No limitation or routine monitoring requirements are in the permit.

Initial screening for metals values that were submitted showed that a closer look at some of the metals is needed. The initial screening check for metals showed that the full model needed to be run on arsenic, cadmium, iron, and zinc. The RP model was run on aluminum, arsenic, cadmium, chromium, copper, cyanide, lead, mercury, selenium, silver, and zinc. The results of the models are: there is acute and chronic RP at 95% and 99% confidence Cyanide for (Outcome A), and there is chronic RP at 95% and 99% confidence for mercury. There was no RP for all other parameters (Outcome B).

### RP input/output summary

All data points are reported in ug/L.

RP Procedure Output	Outfall Number: 002	
	Data Units: µg/L	
Parameter	Aluminum	Arsenic
Distribution	Lognormal	Lognormal
Reporting Limit	10	10
Significant Figures	2	2
Effluent Data Points	16	16
Maximum Reported Effluent Conc.	200	9.2
Coefficient of Variation (CV)	0.765	0.35
Acute Criterion	772	361
Chronic Criterion	NA	154
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	320	11.6
RP Multiplier	1.6	1.3
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	C

<sup>1</sup> See Reasonable Potential Analysis Guidance for definitions of terms

RP Procedure Output	Outfall Number: 002 Data Units: µg/L	
Parameter	Cadmium	Chromium
Distribution	Lognormal	Lognormal
Reporting Limit	10	10
Significant Figures	2	2
Effluent Data Points	16	16
Maximum Reported Effluent Conc.	0.1	2.5
Coefficient of Variation (CV)	NA *a	NA *b
Acute Criterion	5.9	4146
Chronic Criterion	0.55	11.3
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	0.1	1.0
RP Multiplier	1.0	1.0
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	C

\*a All values were reported at 0.1 ug/L. Therefore there was no CV.

\*b All values were reported at 2.5 ug/L. Therefore there was no CV.

RP Procedure Output	Outfall Number: 002 Data Units: µg/L	
Parameter	Cyanide	Cyanide (Outliers Removed)
Distribution	Lognormal	Lognormal
Reporting Limit	10	10
Significant Figures	2	2
Effluent Data Points	16	16
Maximum Reported Effluent Conc.	23	4.0
Coefficient of Variation (CV)	1.0	0.46
Acute Criterion	5.4	5.4
Chronic Criterion	23.6	23.6
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	41	8.4
RP Multiplier	1.8	2.1
RP for Acute?	YES	YES
RP for Chronic?	YES	NO
Outcome	A	A

\*The EPA ProUCL model was used to evaluate the data for outliers.

Dixon's Outlier Test for Cyanide	
Number of Observations = 16	Observation Value 23.0 µg/L is a Potential Outlier (Upper Tail)?
Test Statistic = 0.955	
10% Critical Value = 0.454	For 10% significance level, 23 µg/L is an outlier.
5% Critical Value = 0.507	For 5% significance level, 23 µg/L is an outlier.
1% Critical Value = 0.595	For 1% significance level, 23 µg/L is an outlier.

RP Procedure Output	Outfall Number: 002 Data Units: ug/L	
Parameter	Copper	Lead
Distribution	Lognormal	Lognormal
Reporting Limit	10	10
Significant Figures	2	2
Effluent Data Points	16	16
Maximum Reported Effluent Conc.	5.4	0.6
Coefficient of Variation (CV)	1.1	0.22
Acute Criterion	34.9	284.7
Chronic Criterion	21	10.5
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	9.9	0.7
RP Multiplier	1.8	1.2
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	C

RP Procedure Output	Outfall Number: 002 Data Units: µg/L	
Parameter	Mercury	Mercury (Outlier removed)
Distribution	Lognormal	Lognormal
Reporting Limit	10	10
Significant Figures	2	2
Effluent Data Points	16	15
Maximum Reported Effluent Conc.	0.0122	0.0042
Coefficient of Variation (CV)	1.3	0.90
Acute Criterion	2.6	2.6
Chronic Criterion	0.012	0.012
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	0.024	0.0074
RP Multiplier	2	2
RP for Acute?	NO	NO
RP for Chronic?	YES	NO
Outcome	A	B

\*The EPA ProUCL model was used to evaluate the data for outliers.

<b>Dixon's Outlier Test for Mercury</b>	
Number of Observations = 16	Observation Value 0.012 µg/L is a Potential Outlier (Upper Tail)?
Test Statistic = 0.752	
10% Critical Value = 0.454	<b>For 10% significance level, 0.012 µg/L is an outlier.</b>
5% Critical Value = 0.507	<b>For 5% significance level, 0.012 µg/L is an outlier.</b>
1% Critical Value = 0.595	<b>For 1% significance level, 0.012 µg/L is an outlier.</b>

RP Procedure Output	Outfall Number: 002 Data Units: ug/L	
Parameter	Selenium	Silver
Distribution	Lognormal	Lognormal
Reporting Limit	10	10
Significant Figures	2	2
Effluent Data Points	16	16
Maximum Reported Effluent Conc.	2.5	0.3
Coefficient of Variation (CV)	0.6	0.074
Acute Criterion	19.8	18.8
Chronic Criterion	4.7	NA
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	3.7	0.024
RP Multiplier	1.5	1.1
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
Outcome	C	C

RP Procedure Output	Outfall Number: 002 Data Units: ug/L
Parameter	Zinc
Distribution	Lognormal
Reporting Limit	10
Significant Figures	2
Effluent Data Points	16
Maximum Reported Effluent Conc.	20
Coefficient of Variation (CV)	0.36
Acute Criterion	268
Chronic Criterion	168
Confidence Interval	95
Projected Maximum Effluent Conc. (MEC)	25
RP Multiplier	1.3
RP for Acute?	NO
RP for Chronic?	NO
Outcome	C

*RP Results*  
(See attached Data Sheets)